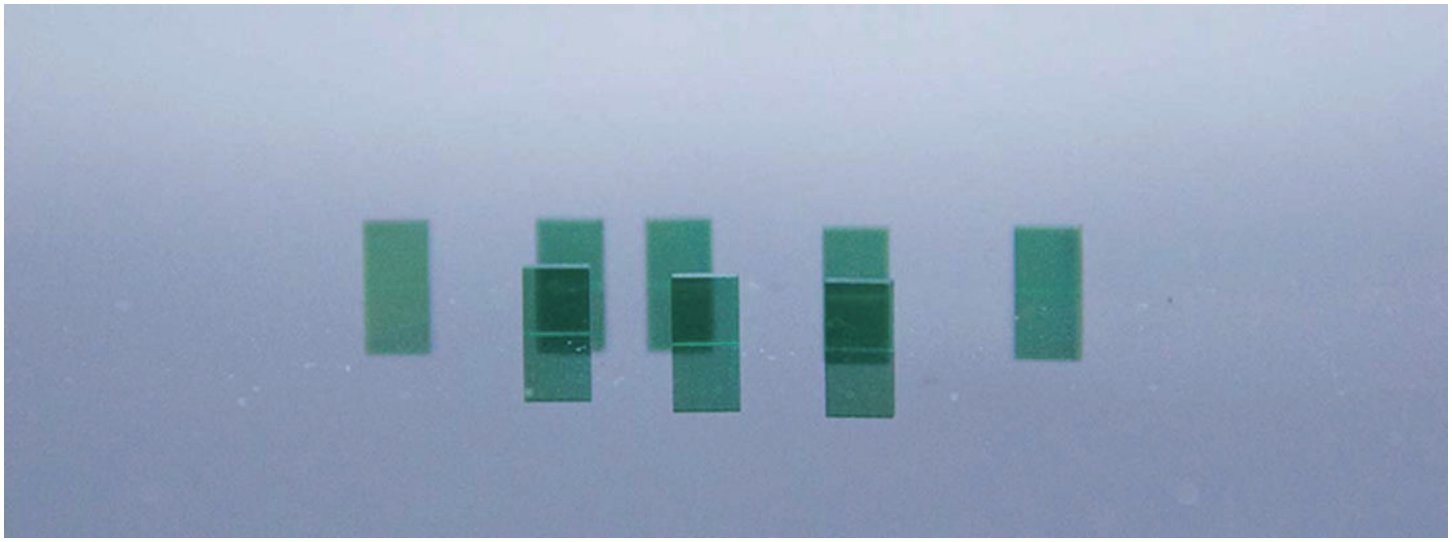
V:YAG



DESCRIPTION

V:YAG crystal, also known as V-doped yttrium aluminum garnet crystal, with the chemical formula of $V^{3+}:Y_3Al_5O_{12}$, is a new type of laser saturable absorber and passive Q-switch crystal product with good comprehensiveness.

It is widely used in laser plotter, laser rangefinder, laser cutting machine and other fields. In the passive Q-switched solid-state laser, the laser has the advantages of good stability, long life, miniaturization, simplicity and practicality. Element V has four chemical valences: +2, +3, +4 and +5. V^{3+} ions with +3 valence are commonly used as Q-switches and saturable absorption ions. They are doped into YAG matrix crystals to achieve passive Q-switches and laser mode locking.

V:YAG crystal is a new material of laser saturable absorber and passive Q-switch, and its wavelength range is 1.06 μm - 1.44 μm. Particularly applicable to 1.3 μm Nd laser. It is an excellent saturable absorber at 1300nm.

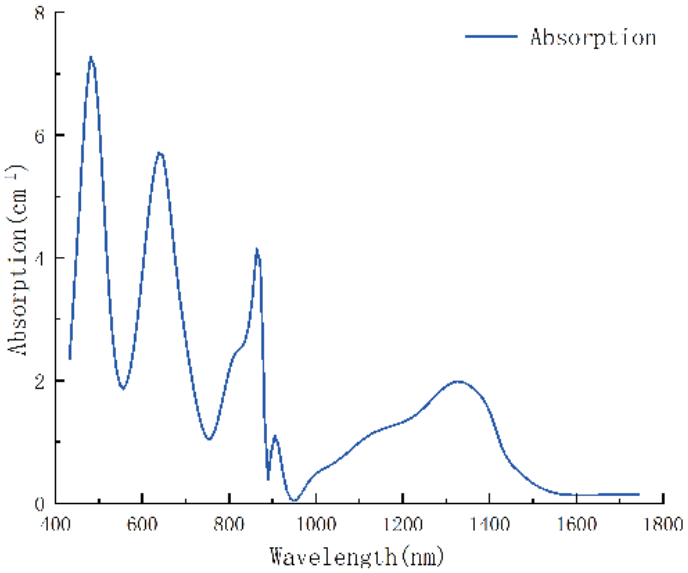
FEATURES

- The service life is long
- Excited state absorption
- High damage threshold
- Recovery time is short
- High degree of saturation for 1.3μm

APPLICATIONS

- 1064nm laser
- 1300nm laser
- Laser plotter
- Laser range finder
- Laser cutting machine

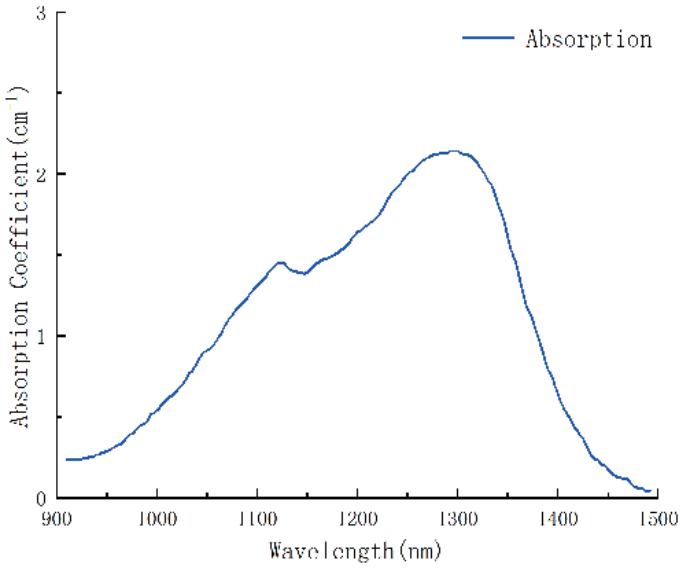
SPECTRA

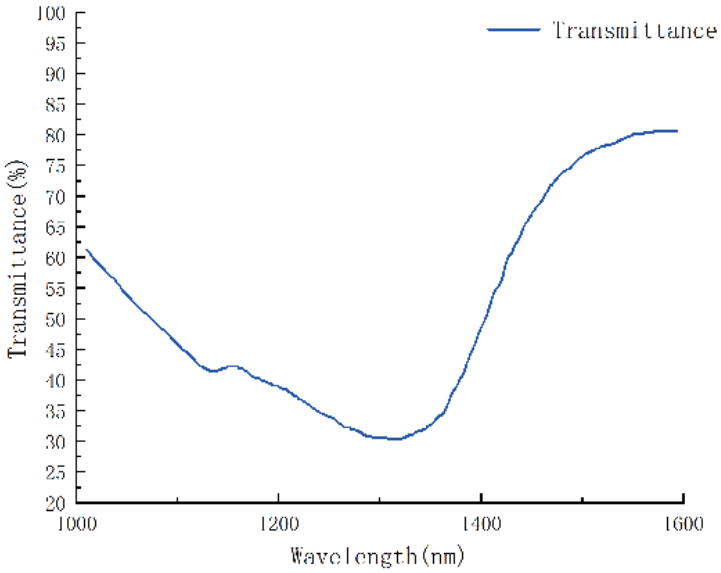


www.crylink.com
sales@crylink.com
+86-21-66566068
Building 7, No.718 Baoqi Road, Baoshan District, Shanghai, China

V:YAG

SPECTRA





POLISHING SPECIFICATION

The direction of the tolerance	< 0.5°
The thickness/diameter tolerance	±0.05 mm
The surface roughness	<λ/8@632 nm
Wavefront distortion	<λ/4@632 nm
The surface quality	10/5
Parallel	30″
Vertical	15′
Clear aperture	>90%
Chamfering	<0.2×45°
HR coating	≤ 0.2% (@ 1340nm)

MATERIAL SPECIFICATIONS

Chemical formula	$V^{3+}:Y_3Al_5O_{12}$
The crystal structure	Cubic - Ia3d
Orientation	<100> <+/-0.5°
Transmittance	30%-97%
Optical density	0.1-0.8
Atomic transition structure	A two-level system
Recovery time	$5\sim22 \times10^{-22}$ s
Concentrate on	(0.05~0.35) wt%
The ground state absorption cross section	7.2×10^{-18} cm^2
Excited state absorption cross section	7.4×10^{-19} cm^2
Launch the bandwidth	1000-1450 nm
Center absorption wavelength	1300 nm
Coating	Standard coating for AR
	R< 0.2%(@1340 nm)
Absorption coefficient	$1.0cm^{-1}$ – $7.0cm^{-1}$
Damage threshold	>500MW/cm^2

www.crylink.com
sales@crylink.com
+86-21-66566068
Building 7, No.718 Baoqi Road, Baoshan District, Shanghai, China